

CLAIMS

1. A patterned substrate having a conductor pattern obtained by:

 forming layer (B) comprising an organic polysilane on conductive substrate (A);

 irradiating a certain region of the layer (B) with a radiation to oxidize the organic polysilane constituting the layer (B) in the certain region; and then

 applying a solution containing a conducting polymer, water, and/or a hydrophilic solvent at least on the certain region of the layer (B) to form layer (C) comprising the conducting polymer, while impregnating the layer (B) in the certain region with the conducting polymer to electrically connect the layer (C) and the substrate (A).
2. The patterned substrate according to Claim 1, wherein the irradiation is performed through a shadow mask pattern.
3. The patterned substrate according to Claim 1 or 2, wherein the irradiation is performed in an atmosphere having a humidity of 30% or more.
4. The patterned substrate according to any one of Claims 1 to 3, characterized in that a surface of the layer (B) excluding the irradiated region is oxidized after the organic polysilane constituting the layer (B) in the irradiated region is oxidized.
5. The patterned substrate according to any one

of Claims 1 to 4, wherein the surface of the irradiated region of the layer (B) and the solution containing the conducting polymer, water, and/or a hydrophilic solvent are allowed to contact with each other and then are kept as they are for 15 seconds or more, before applying the solution containing the conducting polymer, water, and/or the hydrophilic solvent on said surface.

6. The patterned substrate according to any one of Claims 1 to 5, wherein after impregnating the layer (B) in the irradiated region with the conducting polymer, the layer (B) is irradiated with a radiation to oxidize the organic polysilane constituting the layer (B) excluding the irradiated region.

7. A patterned substrate characterized by having, on conductive substrate (A), layer (B) comprising an irradiated region which contains an oxide of an organic polysilane produced by irradiating the organic polysilane with a radiation and a conducting polymer and a non-irradiated region which contains the organic polysilane, and having layer (C) comprising the conducting polymer at least on the irradiated region of the layer (B).

8. The patterned substrate according to any one of Claims 1 to 7, wherein the conducting polymer includes polythiophene or a derivative thereof, and/or polyaniline or a derivative thereof.

9. An organic electroluminescence device, characterized by using the patterned substrate

according to any one of Claims 1 to 8.

10. An organic transistor, characterized by using the patterned substrate according to any one of Claims 1 to 8.

11. An organic photo-sensor, characterized by using the patterned substrate according to any one of Claims 1 to 8.

12. An organic solar cell, characterized by using the patterned substrate according to any one of Claims 1 to 8.

13. An optical-optical conversion device, characterized by using the patterned substrate according to any one of Claims 1 to 8.

14. A method for producing a patterned substrate having a conductor pattern, comprising:

forming layer (B) comprising an organic polysilane on conductive substrate (A);

irradiating a certain region of the layer (B) with a radiation to oxidize the organic polysilane constituting the layer (B) in the certain region; and then

applying a solution containing a conducting polymer, water, and/or a hydrophilic solvent at least on the certain region of the layer (B) to form layer (C) comprising the conducting polymer, while impregnating the layer (B) in the certain region with the conducting polymer to electrically connect the layer (C) and the substrate (A) to fabricate the

conductor pattern.

15. The method for production according to Claim 14, wherein a surface of the layer (B) excluding the irradiated region is made hydrophilic after the organic polysilane constituting the layer (B) of the irradiated region is oxidized.

16. The method for production according to Claim 14 or 15, characterized in that the organic polysilane constituting the layer (B) excluding the irradiated region is oxidized by being irradiated with a radiation, after the organic polysilane constituting the layer (B) in the irradiated region is oxidized and then the layer (B) in the irradiated region is impregnated with the conducting polymer.